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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
08/973,305	04/09/1998	MATS LEIJON	70564-2/8246	6734

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EXAMINER

MULLINS, BURTON S

ART UNIT	PAPER NUMBER
	2834

DATE MAILED: 11/14/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	08/973,305	LEIJON ET AL. <i>N</i>	
	Examiner	Art Unit	
	Burton S. Mullins	2834	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

P riod for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 23 September 2002.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-9,11-35 and 39-47 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 1-9,11-35 and 39-47 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 28 November 1997 is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) All b) Some * c) None of:
1. Certified copies of the priority documents have been received.
2. Certified copies of the priority documents have been received in Application No. _____.
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) The translation of the foreign language provisional application has been received.
- 14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
- 4) Interview Summary (PTO-413) Paper No(s) _____. *N*
- 5) Notice of Informal Patent Application (PTO-152)
- 6) Other: _____

DETAILED ACTION

Suspension

1. Pursuant to the Board of Appeal's final decision regarding U.S. Application No. 08/973,019, suspension has been lifted. As set forth in the decision on petition requesting suspension, the instant application was granted a suspension pending the decision on appeal of the '019 application. On November 27, 2002, the Board affirmed the rejection of the '019 application and on August 27, 2003, the Board denied applicant's request for reconsideration, thus terminating prosecution of the '019 application. An action on the merits follows.

Drawings

2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the "non-isolated" [sic] strands (claim 7) must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

3. Claims 1-47 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In claims 1, 9 and 35, recitations pertaining to the at least one

winding (or cable) “comprising at least one current-carrying conductor and a magnetically permeable, electric field confining covering the conductor” make no sense. Since applicant has argued, in response to the 112, first paragraph rejection of the previous action, that “the original specification inherently disclosed that the winding is both magnetically permeable and electric field confining”, the examiner will take the phrase “electric field confining” to be an adjective modifying the at least one winding or cable. Further, recitation “for connecting the neutral point of said winding in circuit to ground” in claim 1 makes no sense. Does the “circuit” refer to the machine winding, the network, or some other circuit? In claim 7, recitation “only a minority of said strands being non-isolated from each other” is vague and indefinite. How are the strands “isolated” from each other? Does applicant mean insulated?

Claim Rejections - 35 USC § 103

4. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
5. Claims 1-6, 8, 9, 11-13, 15, 16, 18, 19, 21-22, 25-27, 29-35 and 39-47 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shildneck (USP 3,014,139) in view of Elton et al. (USP 5,036,165).

Shildneck discloses the claimed invention except for utilizing a cable winding comprising of at least one semiconducting layer around the conductor. Shildneck discloses a direct cooled cable winding for an electromagnetic device such as a large turbine-driven generator. In column 2, lines 39-72, Shildneck teaches several advantages of the use of cable windings over conventional rectangular bars such as conductor flexibility and having shorter length of the

conductor end-turn portions. Elton et al. disclose an electrical cable provided with an internal grading layer of semiconducting pyrolyzed glass fiber layer in electrical contact with a cable conductor. In an alternate embodiment, Elton et al. disclose an electrical cable provided with an exterior layer of internal grading layer of semi-conducting pyrolyzed glass fiber layer in contact with an exterior cable insulator having a predetermined reference potential. Furthermore, note that Elton et al. teach that it is known to provide a semiconducting layer in the insulation of a conductor and to connect that layer to a fixed potential in order to provide an equipotential surface on the conductor preventing corona discharge around the conductors.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have used the cable winding as taught by Elton et al. to the dynamo electric machine of Shildneck since such a modification according to Elton et al. would prohibit the development of corona discharge. Elton et al. further teach in column 2, lines 42-48 that having a semiconducting layer would bleed off any static electric discharge or electric discharge developed on the exterior surface of the insulation.

In regard to forming the semiconducting layer with the same coefficient of thermal expansion as that of the insulation layer, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have formed these layers with similar coefficients since it was known in the art that the expansion rate of the two layers would be the same and this is desirable in order to prevent cracking of the insulation and wear between the two.

In regard to the various grounding methodologies for use with the system, as recited in claims 12-13,15,16,18,19,21,22 and 26-28, the choice of the particular configuration would have been an obvious matter of design choice, the selection contingent upon the requirements

of the application. For instance, parameters such as high resistance grounding, resonant or inductive grounding are commonly known alternatives. Examples of commonly known grounding techniques are described in IEEE C62.92-1989, IEEE Guide for the Application Of Neutral Grounding in Electrical Systems, Part II. (IEEE, New York, USA, September 1989).

6. Claim 7 as best understood is rejected under 35 U.S.C. § 103(a) as being unpatentable over Shildneck (USP 3,014,139) in view of Elton et al. (USP 5,036,165) in view of Takaoka et al. (USP 5,094,703). Shildneck and Elton et al. disclose the claimed invention except for a teaching of having the generator with windings comprising a plurality of insulated conductive elements and an at least one uninsulated conductive elements.

Takaoka et al., as seen in figures 7,8,10 and 11 teach having a stranded conductor for an electrical cable comprising a combination of uninsulated stranded conductor and an insulated stranded conductor.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have the windings of Elton et al. comprised of insulated and uninsulated electrical conductor strands as taught by Takaoka et al. since such a modification according to Takaoka et al. would reduce the amount of insulation needed and the number of electrical connections required in the end windings.

7. Claims 14,17,20,23,24 and 28 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Shildneck (USP 3,014,139) in view of Elton et al. (USP 5,036,165) and further in view Lauw (USP 4,982,147). Shildneck and Elton et al. disclose the claimed invention except for a teaching of having or not having a step-up transformer in the system device.

Lauw in column 6, lines 50-52 teach that use of transformers to step-up or step down the voltage are contingent upon the requirement of the application. In this instant application, having the operating voltages in the range higher than 30kV-36kV, it would have been an obvious matter of design choice to one having ordinary skill in the art to utilize a step-up transformer in order to increase and meet the required voltage in the application.

Response to Arguments

8. Applicant's arguments filed 23 September 2002 have been fully considered but they are not persuasive. Applicant's primary argument is that Elton does not teach a cable used as a winding in an electric machine. This is not convincing because Elton teaches that the embodiments shown in Figs.1-7 are suitable for use in a dynamoelectric machine (abstract, lines 4-8). The cable of Fig.7 is disclosed as being a further embodiment of Figs.1-6, which are shown to be suitable for windings on a stator in a dynamo-electric machine (c.8, lines 26-38). In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, Elton's cable layers provide protection from corona discharge. Applicant further argues that Elton's cable is stiff and if bent would crack and not be able to withstand high voltage. The examiner responds that Elton at c.8, lines 3-9 notes that the semi-

conducting layer can be chopped, mixed with resin and molded, or blown on any complex-shaped substrate, which suggests that the semi-conducting layer can be molded or blown onto a cable without causing cable rigidity. Further, Elton teaches that the insulated electrical windings 50 initially extend axially and then bend circumferentially (c.5, line 67-c.6, line 4; Fig.5). Such a bend requires adequate cable flexibility.

Allowable Subject Matter

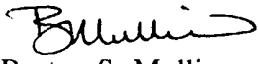
9. The examiner has identified allowable subject matter in applicant's related case U.S. Serial No. 10/603,802 pertaining to the conductor comprising a plurality of conductive elements, selected ones of said plurality of conductive elements being insulated from each other, and selected other ones of said plurality of conductive elements being uninsulated in order to electrically contact the inner layer. In order to expedite prosecution, the examiner suggests similar language be incorporated into claim 7 of the present application, which appears to be directed towards the same features. Support for these features may be found on p.7, lines 10-15 of the specification.

Conclusion

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Burton S. Mullins whose telephone number is 305-7063. The examiner can normally be reached on Monday-Friday, 9 am to 5 pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nestor Ramirez can be

reached on 308-1371. The fax phone number for the organization where this application or proceeding is assigned is 305-1341.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 308-0956.


Burton S. Mullins
Primary Examiner
Art Unit 2834

11 November 2003
bsm